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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/782,926	02/23/2004	Yoshihiro Imajo	HITA.0518	7547

7590
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EXAMINER

NGUYEN, HOAN C

ART UNIT PAPER NUMBER

2871

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	04/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/782,926

Applicant(s)

IMAJO ET AL.

Examiner

HOAN C. NGUYEN

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 January 2007.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-41 is/are pending in the application.
- 4a) Of the above claim(s) 3 and 5-38 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 2,4 and 39-41 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 01/23/2007 has been entered.

Claim 1 is cancelled. Nonelected claims 3 and 5-38 are withdrawn. Claims 2, 4 and 39-41 are elected.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

1. Claims 2, 4 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US6903794B2) in view of Terada (US6420889B1).

In regard to claim 2, Fukuta et al. teach (Fig. 1) a display device comprising

- a display panel 10

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- a frame member 11/11b/20 different from the display panel, which is mounted on the back surface of the display panel;
- a first board (flexible substrate 3),
- a second board (connection electrode 15) mounted with a display control circuit (a semiconductor element 6) to be connected to the connector 4a thereon

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (11a and LED 16) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

However, Fukuta et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device.

Terada teaches a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device. This connector 60/13 applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Fukuta et al. disclosed with a first connector 60/13, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for inspecting the LCD as taught by Terada (col. 2 lines 25-31).

2. Claims 2, 4 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US6903794B2) in view of **Winstead (US6424842B1)**.

In regard to claim 2, Fukuta et al. teach (Fig. 1) a display device comprising

- a display panel 10
- a frame member 11/11b/20 different from the display panel, which is mounted on the back surface of the display panel;
- a first board (flexible substrate 3),
- a second board (connection electrode 15) mounted with a display control circuit (a semiconductor element 6) to be connected to the connector 4a thereon

wherein

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- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (11a and LED 16) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

However, Fukuta et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data external from another device.

Winstead teaches a first connector 50, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device. This connector 50 applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Fukuta et al. disclosed with a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for reducing cost and size as taught by **Winstead** (col. 1 lines 54-62).

3. Claims 2, 4 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US6903794B2) in view of **Colton et al. (US5218760A)**.

In regard to claim 2, Fukuta et al. teach (Fig. 1) a display device comprising

- a display panel 10
- a frame member 11/11b/20 different from the display panel, which is mounted on the back surface of the display panel;
- a first board (flexible substrate 3),
- a second board (connection electrode 15) mounted with a display control circuit (a semiconductor element 6) to be connected to the connector 4a thereon

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (11a and LED 16) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

However, Fukuta et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data external from another device.

Colton et al. teach a first connector 48a, which is mounted on a back surface of the first board and which allows inputting of data externally from another device. This connector applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Fukuta et al. disclosed with a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for connecting between the external input/output device and electrical component taught by **Colton et al.** (col. 5 lines 44-46).

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4. Claims 2, 4 and 39-40 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukuta et al. (US6903794B2) in view of **Chang (US20030117543A1)**.

In regard to claim 2, Fukuta et al. teach (Fig. 1) a display device comprising

- a display panel 10
- a frame member 11/11b/20 different from the display panel, which is mounted on the back surface of the display panel;
- a first board (flexible substrate 3),
- a second board (connection electrode 15) mounted with a display control circuit (a semiconductor element 6) to be connected to the connector 4a thereon

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (11a and LED 16) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

However, Fukuta et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data external from another device.

Chang teaches a first connector 23, which is mounted on a back surface of the first board and which allows inputting of data externally from another device. This connector applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Fukuta et al. disclosed with a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for simplifying the production of the display device and reducing the production step, labor cost and contamination in the material process taught by **Chang** (paragraph 0023).

5. Claims 2, 4 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B1) in view of **Terada (US6420889B1)**.

In regard to claim 2, Terao et al. teach (Figs. 2-3) a display device comprising

- a display panel 11

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- a frame member 10/15 different from the display panel, which is mounted on the back surface of the display panel;
- a first board 20
- a second board 12 mounted with a display control circuit inherently on PCB 12 to be connected to the connector on 20 thereon.

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member 10.

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (15 and 22) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

Claim 41:

- the frame 10 has a through hole accommodating said connector.

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However, Terao et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device.

Terada teaches a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device. This connector 60/13 applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Terao et al. disclosed with a first connector 60/13, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for inspecting the LCD as taught by **Terada** (col. 2 lines 25-31).

6. Claims 2, 4 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B1) in view of **Winstead (US6424842B1)**.

In regard to claim 2, Terao et al. teach (Figs. 2-3) a display device comprising

- a display panel 11
- a frame member 10/15 different from the display panel, which is mounted on the back surface of the display panel;
- a first board 20
- a second board 12 mounted with a display control circuit inherently on PCB 12 to be connected to the connector on 20 thereon.

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wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member 10.

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (15 and 22) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to a second connect the first board to the second board.

Claim 41:

- the frame 10 has a through hole accommodating said second connector.

However, Terao et al. fail to disclose a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device.

Winstead teaches a first connector 50, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device.

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This connector 50 applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Terao et al. disclosed with a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for reducing cost and size as taught by **Winstead** (col. 1 lines 54-62).

7. Claims 2, 4 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B1) in view of **Colton et al. (US5218760A)**.

In regard to claim 2, Terao et al. teach (Fig. 3) a display device comprising

- a display panel 11
- a frame member 10/15 different from the display panel, which is mounted on the back surface of the display panel;
- a first board 20
- a second board 12 mounted with a display control circuit inherently on PCB 12 to be connected to the connector on 20 thereon.

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member 10.

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (15 and 22) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to a second connect the first board to the second board.

Claim 41:

- the frame 10 has a through hole accommodating said second connector.

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Colton et al. teach a first connector 48a, which is mounted on a back surface of the first board and which allows inputting of data externally from another device. This connector applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Terao et al. disclosed with a first connector, which is mounted on a back surface of the

first board and which allows inputting of video data externally from another device for connecting between the external input/output device and electrical component taught by **Colton et al.** (col. 5 lines 44-46).

8. Claims 2, 4 and 39-41 are rejected under 35 U.S.C. 103(a) as being unpatentable over Terao et al. (US6342932B1) in view of **Chang (US20030117543A1)**.

In regard to claim 2, Terao et al. teach (Figs. 2-3) a display device comprising

- a display panel 11
- a frame member 10/15 different from the display panel, which is mounted on the back surface of the display panel;
- a first board 20
- a second board 12 mounted with a display control circuit inherently on PCB 12 to be connected to the connector on 20 thereon.

wherein

- the first board and the second board are physically separated from each other
- the second board contacts with back surface of a region of the display panel except for a display portion,
- the first board contacts with back surface of the frame member 10.

wherein

Claim 4:

- an area of the second board is set smaller than an area of the first board.

Claim 39:

- the frame member holds the display panel, and a backlight (15 and 22) is put between the frame and the display panel PNL.

Claim 40:

- each of the first board and the second board has a second connector to connect the first board to the second board.

Claim 41:

- the frame 10 has a through hole accommodating said second connector.

Chang teaches a first connector 23, which is mounted on a back surface of the first board and which allows inputting of data externally from another device. This connector applied to the first board inherently transmits the video data to the second board.

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify a liquid crystal display device as Terao et al. disclosed with a first connector, which is mounted on a back surface of the first board and which allows inputting of video data externally from another device for simplifying the production of the display device and reducing the production step, labor cost and contamination in the material process taught by **Chang** (paragraph 0023).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to HOAN C. NGUYEN whose telephone number is (571)

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272-2296. The examiner can normally be reached on MONDAY-THURSDAY:8:00AM-4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (571) 272-1787. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

HOAN C. NGUYEN
Examiner
Art Unit 2871

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